

### 3.2.6 BIOLOGICAL RESOURCES

**Terrestrial Resources.** Vegetation at Hanford has been characterized as shrub-steppe. Present site development consists of clusters of large buildings that are found at widely spaced locations. Developed areas encompass about 6 percent of the site. The remaining areas of the site can be divided into 10 major plant communities (Figure 3.2.6–1). Hanford is dominated by communities in which big sagebrush is a major component. Other plant communities contain a variety of grasses and herbaceous plants. Areas previously disturbed by agricultural activities are dominated by nonnative species, such as cheatgrass. Trees are uncommon on the site, but those that are present include cottonwood and willow, which are both found near water bodies, and a few other deciduous species, which were originally planted near farmsteads as windbreaks. Nearly 600 species of plants have been identified at Hanford (DOE 1995o:4-85).

Hanford provides suitable habitat for numerous animal species, including 12 species of amphibians and reptiles, 187 species of birds, and 39 species of mammals (HF PNL 1994a:4.99,4.103). Common animal species at Hanford include the side-blotched lizard, gopher snake, western meadowlark, horned lark, Great Basin pocket mouse, and black-tailed jackrabbit. Trees planted around former farmsteads serve as nesting platforms for several species of birds, including hawks, owls, ravens, magpies, and great blue herons; these trees also serve as night roosts for bald eagles (HF PNL 1994a:4.92,4.93). The Hanford Reach of the Columbia River, including several sparsely vegetated islands, provides nesting habitat for the Canadian goose, ring-billed gull, Forster's tern, and great blue heron. Although several game animals are found at Hanford, only waterfowl hunting is permitted onsite north of the Columbia River (HF 1992a:1). Numerous raptors, such as the Swainson's hawk and red-tailed hawk, and carnivores, such as the coyote and bobcat, are found on Hanford. A variety of migratory birds has been found at Hanford. Migratory birds, as well as their nests and eggs, are protected by the *Migratory Bird Treaty Act*. Eagles are similarly protected by the *Bald and Golden Eagle Protection Act*.

Vegetative cover in the vicinity of the 200 Area, the proposed location of storage facilities, falls within the sagebrush and cheatgrass-Sandberg bluegrass community (Figure 3.2.6–1). Associated shrubs and grasses of this community include gray rabbitbrush, green rabbitbrush, hopsage, snowy buckwheat, Indian rice grass, thickspike wheatgrass, and needle-and-threadgrass. Common animal species found on the proposed site are expected to be similar to those described for Hanford as a whole.

**Wetlands.** Primary wetland areas at Hanford are found in the riparian zone along the Columbia River. The extent of this zone varies, but it includes large stands of willows, grasses, and other plants. This area has been extensively affected by hydropower operations at Priest Rapids Dam (DOE 1995o:4-89).

Other large areas of wetlands at Hanford can be found north of the Columbia River within the Saddle Mountain National Wildlife Refuge and the Wahluke Wildlife Unit Columbia Basin Area. These two areas encompass all the lands extending from the north bank of the Columbia River northward to the site boundary and east of the Columbia River down to Ringold Springs. Wetland habitat in these areas consists of fairly large ponds resulting from irrigation runoff. These ponds have extensive stands of cattails and other emergent aquatic vegetation surrounding the open water regions. They are extensively used as nesting sites by waterfowl (HF PNL 1994a:4.113).

On the western side of Hanford, Rattlesnake Springs supports a riparian zone of about 2.5 km (1.6 mi) in length, featuring watercress, bulrush, spike rush, cattail and peachleaf willow. Snively Springs also contains a diverse biotic community similar to Rattlesnake Springs (HF PNL 1994a:4.112).

Several semi-permanent artificial ponds and ditches that receive cooling water or irrigation wastewater are also present on Hanford near the 200 Area and support wetland vegetation (that is, cattails, reeds, and willows) around their periphery. These wetlands provide habitat for songbirds, shorebirds, and waterfowl.

**Aquatic Resources.** Aquatic resources on Hanford include the Columbia River, ephemeral streams, springs, surface ponds, and ditches. The Columbia River flows along the northern and eastern edges of Hanford (HF PNL 1994a:4.106).

The Hanford Reach supports 44 anadromous and resident species of fish. Many of the fish species present in the Hanford Reach are dependent upon flowing water and rocky substrate for at least part of their life cycles. Fall chinook salmon, steelhead trout, mountain whitefish, and smallmouth bass spawn in this area. The destruction of other mainstream Columbia River spawning areas by dams has increased the relative importance of the Hanford Reach for spawning (HF PNL 1994a:4.110).

The Hanford Reach provides a migration route to upstream spawning areas for spring, summer, and fall adult chinook salmon, coho salmon, sockeye salmon, and steelhead trout. It also provides rearing habitat for the salmonid juveniles in their downstream migration to the sea. Principal resident fish species sought by anglers in the Hanford Reach include mountain whitefish, white sturgeon, smallmouth bass, crappie, catfish, walleye, and perch (HF PNL 1994a:4.110,4.112).

The Yakima River borders the southern portion of Hanford. Game fish found in the river in the vicinity of the site are smallmouth bass, steelhead trout, and channel catfish. Cold Creek and its tributary, Dry Creek, are ephemeral streams within the Yakima River drainage system along the southern boundary of Hanford. These streams do not support any fish populations (HF 1992a:2; HF PNL 1994a:4.42).

There are several springs at Hanford. Rattlesnake Springs and Snively Springs, located in the western portion of the site, form short streams which seep into the ground (Figure 3.2.4-1). None of the springs support any fish populations (HF PNL 1984a:3.40; HF PNL 1994a:4.112).

The release of wastewater at Hanford facilities has created four semipermanent artificial ponds and several ditches that did not exist before these facilities were built. These are temporary and will disappear if the industrial release of water is terminated. All of the ponds, except West Pond and one ditch on the site, support goldfish. West Pond was created by a rise in the water table and is not fed by surface flow; thus, it is alkaline and has a reduced complement of biota (Figure 3.2.4-1) (HF PNL 1978a:2,3,5,10,13).

**Threatened and Endangered Species.** Sixty-five federally and State-listed threatened, endangered, and other special status species may be found in the vicinity of Hanford, 13 of these are federally or State-listed as threatened or endangered (Table 3.2.6-1). Forty-one species listed in Table 3.2.6-1 have been observed at Hanford or the Hanford Reach of the Columbia River, including nine of the federally or State-listed endangered or threatened species. Once specific project site locations have been determined, site surveys will verify the presence of special status species. No critical habitat, as defined in ESA (50 CFR 17.11 and 17.12), exists on Hanford.

The bald eagle is the only federally listed species known to be found at Hanford. It is a regular winter resident along the Hanford Reach, where it forages for salmon and waterfowl. Trees in the historic Hanford Townsite area are used by eagles for perching; however, eagles do not nest at Hanford. The peregrine falcon is a migrant in the Hanford area. The Aleutian Canada goose and Oregon silverspot butterfly are not known to occur on the site.

Several State-listed animal species have been observed at Hanford. The ferruginous hawk is known to nest on transmission towers and forages over much of the site. Habitats similar to those used by this species for foraging are relatively common at Hanford; however, nesting sites are more limited (DOE 1992e:4-26). Pygmy rabbits have only rarely been seen at Hanford. [Text deleted.] Species occurring along the Hanford Reach include the American white pelican and sandhill crane. The sandhill crane is also found in upland habitats (DOE 1992e:4-27; DOE 1995o:4-93).

State-listed plant species observed at Hanford include Columbia milk-vetch, Columbia yellowcress, and dwarf desert primrose. Columbia milk-vetch has been found onsite on top of Umtanum Ridge above the Midway substation. Columbia yellowcress occurs in the wetted zone of the water's edge along the Columbia River. It has been observed between the 100 B Area and the old Hanford Townsite. Dwarf desert primrose is known to grow in Ringold Flats and in a gravel pit approximately 2.5 km (1.6 mi) north of Wye Barricade (Figure 3.2.1-1) (HF WHC 1992a:3-1,3-5,3-6). Other State-listed plant species found in the vicinity of Hanford include northern wormwood and Hoover's desert parsley.

**Table 3.2.6-1. Federally and State-Listed Threatened, Endangered, and Other Special Status Species That May Be Found on or in the Vicinity of Hanford Site**

Common Name	Scientific Name	Status <sup>a</sup>	
		Federal	State
<b>Mammals</b>			
Fringed myotis	<i>Myotis thysanodes</i>	NL	M
Long-eared myotis	<i>Myotis evotis</i>	NL	M
Long-legged myotis	<i>Myotis volans</i>	NL	M
Merriam's shrew <sup>b</sup>	<i>Sorex merriami</i>	NL	C
Northern grasshopper mouse <sup>b</sup>	<i>Onychomys leucogaster</i>	NL	M
Pacific western big-eared bat <sup>b</sup>	<i>Plecotus townsendii townsendii</i>	NL	C
Pallid bat <sup>b</sup>	<i>Antrozous pallidus</i>	NL	M
Pygmy rabbit <sup>b</sup>	<i>Brachylagus idahoensis</i>	NL	E
Sagebrush vole <sup>b</sup>	<i>Lagurus curtatus</i>	NL	M
Small-footed myotis	<i>Myotis ciliolabrum</i>	NL	M
[Text deleted.]			
<b>Birds</b>			
Aleutian Canada goose <sup>c</sup>	<i>Branta canadensis leucopareia</i>	T	E
American white pelican <sup>b,d</sup>	<i>Pelecanus erythrorhynchos</i>	NL	E
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>	NL	M
Bald eagle <sup>b,c,d</sup>	<i>Haliaeetus leucocephalus</i>	T	T
Black tern <sup>b</sup>	<i>Chlidonius niger</i>	NL	M
Black-crowned night heron	<i>Nycticorax nycticorax</i>	NL	M
Black-necked stilt	<i>Himantopus mexicanus</i>	NL	M
Common loon <sup>d</sup>	<i>Gavia immer</i>	NL	C
Ferruginous hawk <sup>b</sup>	<i>Buteo regalis</i>	NL	T
Flammulated owl <sup>b</sup>	<i>Otus flammeolus</i>	NL	C
Forester's tern	<i>Sterna forsteri</i>	NL	M
Golden eagle	<i>Aquila chrysaetos</i>	NL	C
Grasshopper sparrow	<i>Ammodramus savannarum</i>	NL	M
Gray flycatcher	<i>Empidonax wrightii</i>	NL	M
Great blue heron <sup>b</sup>	<i>Ardea herodias</i>	NL	M
[Text deleted.]			
Lewis' woodpecker <sup>b</sup>	<i>Melanerpes lewis</i>	NL	C
Loggerhead shrike <sup>b</sup>	<i>Lanius ludovicianus</i>	NL	C
Long-billed curlew	<i>Numenius americanus</i>	NL	M
Northern goshawk <sup>b</sup>	<i>Accipiter gentilis</i>	NL	C
Osprey	<i>Pandion haliaetus</i>	NL	M
Peregrine falcon <sup>b,c</sup>	<i>Falco peregrinus</i>	E (S/A)	E
Prairie falcon <sup>b</sup>	<i>Falco mexicanus</i>	NL	M
Sage sparrow <sup>b</sup>	<i>Amphispiza belli</i>	NL	C
Sage thrasher	<i>Oreoscoptes montanus</i>	NL	C
Sandhill crane <sup>b,d</sup>	<i>Grus canadensis</i>	NL	E

**Table 3.2.6-1. Federally and State-Listed Threatened, Endangered, and Other Special Status Species That May Be Found on or in the Vicinity of Hanford Site—Continued**

Common Name	Scientific Name	Status <sup>a</sup>	
		Federal	State
<b>Birds (continued)</b>			
Swainson's hawk <sup>b</sup>	<i>Buteo swainsoni</i>	NL	C
Turkey vulture	<i>Cathartes aura</i>	NL	M
Western bluebird <sup>b</sup>	<i>Sialia mexicana</i>	NL	C
Western burrowing owl <sup>b</sup>	<i>Athene cunicularia hypugaea</i>	NL	C
Western grebe	<i>Aechmophorus occidentalis</i>	NL	M
Western sage grouse <sup>b</sup>	<i>Centrocercus urophasianus phaios</i>	NL	C
<b>Reptiles</b>			
Desert night snake <sup>b</sup>	<i>Hypsiglena torquata</i>	NL	M
<b>Amphibians</b>			
Woodhouse's toad <sup>b</sup>	<i>Bufo woodhousei</i>	NL	M
<b>Fish</b>			
Mountain sucker <sup>d</sup>	<i>Catostomus platyrhynchus</i>	NL	M
Piute sculpin <sup>d</sup>	<i>Cottus beldingi</i>	NL	M
Reticulate sculpin <sup>d</sup>	<i>Cottus perplexus</i>	NL	M
Sandroller <sup>d</sup>	<i>Percopsis transmontana</i>	NL	M
<b>Invertebrates</b>			
Columbia River tiger beetle	<i>Cicindela columbica</i>	NL	C
Giant Columbia River limpet	<i>Fisherola nuttalli</i>	NL	C
Great Columbia River spire snail <sup>d</sup>	<i>Fluminicola columbianus</i>	NL	C
Oregon silverspot butterfly	<i>Speyeria zerene hippolyta</i>	T	E
<b>Plants</b>			
Bristly cyptantha	<i>Cryptantha interrupta</i>	NL	M2
Columbia milk-vetch <sup>b</sup>	<i>Astragalus columbianus</i>	NL	T
Columbia yellowcress <sup>b</sup>	<i>Rorippa columbiae</i>	NL	E
Dense sedge <sup>b</sup>	<i>Carex densa</i>	NL	S
Desert dodder	<i>Cuscuta denticulata</i>	NL	M1
Dwarf desert primrose <sup>b</sup>	<i>Oenothera pygmaea</i>	NL	T
False-pimpernel <sup>b</sup>	<i>Lindernia dubia</i> var. <i>anagallidea</i>	NL	S
Gray cryptantha <sup>b</sup>	<i>Cryptantha leucophaea</i>	NL	S
Hoover's desert parsley	<i>Lomatium tuberosum</i>	NL	T
Northern wormwood	<i>Artemisia campestris borealis</i> var. <i>wormskioldii</i>	NL	E
Piper's daisy <sup>b</sup>	<i>Erigeron piperianus</i>	NL	S
Shining flatsedge <sup>b</sup>	<i>Cyperus bipartitus</i>	NL	S
Southern mudwort <sup>b</sup>	<i>Limosella acaulis</i>	NL	S
Thompson's sandwort <sup>b</sup>	<i>Arenaria franklinii</i> var. <i>thompsonii</i>	NL	M2

<sup>a</sup> Status codes: C=State candidate; E=endangered; M=monitored animal; M1=monitored plant - Group 1 (additional field work needed); M2=monitored plant - Group 2 (unresolved taxonomic question); NL=not listed; S=State sensitive; S/A=protected under the similarity of appearance provision of the *Endangered Species Act*; T=threatened.

<sup>b</sup> Species observed on Hanford Site.

<sup>c</sup> USFWS Recovery Plan exists for this species.

<sup>d</sup> Occurs along the Hanford Reach of the Columbia River.

Source: 50 CFR 17.11; 50 CFR 17.12; DOE 1992e; DOE 1995o; HF PNL 1994a; HF WHC 1992a; WA DNR 1994a; WA DOW 1994a.

Sagebrush habitat is considered priority habitat by the State of Washington because of its relative scarcity in the State and its use as a nesting and breeding habitat by loggerhead shrikes, burrowing owls, sage sparrows, pygmy rabbits, sage thrashers, western sage grouse, and sagebrush voles. Most of these species have been observed at Hanford.

The proposed storage site contains sagebrush habitat that is potentially suitable for use by the species listed above. The loggerhead shrike has been frequently observed in the vicinity and is known to select tall big sagebrush as nest sites. The 200 Area also contains a portion of the foraging range of nesting ferruginous hawks (DOE 1995o:4-93).